भारतीय मानक
Indian Standard

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साइकिल में इस्तेमाल होने वाले पैडलॉक — विशिष्टि

(दूसरा पुनरीक्षण)

Padlocks Used In Bicycle — Specification

(Second Revision)

ICS 91.190

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September 2021 **Price Group 4**

Utensils, Cutlery and Domestic Hardware Sectional Committee, MED 33

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Utensils, Cutlery and Domestic Hardware Sectional Committee had been approved by the Mechanical Engineering Divisional Council.

This standard was first published in 1972 and subsequently revised in 1987.

In this revision following major changes have been made:

a) Non interchangeability requirement of the lock and key has been modified;

b) Marking and packing clause have been updated; and

c) Reference standards have been updated.

The composition of the committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

PADLOCKS USED IN BICYCLE — SPECIFICATION

(Second Revision)

1 SCOPE

This standard covers requirements of general dimensions, material and other requirements of padlocks used in bicycle.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No	*Title*
277 : 2018	Galvanized steel strips and sheets (plain and corrugated) — Specification (*seventh revision*)
410 : 1977	Specification for cold rolled brass sheet, strip and foil (*third revision*)
513 (Part 1) : 2016	Cold reduced carbon steel sheet and strip: Part 1 Cold forming and drawing purpose (*sixth revision*)
740 : 1977	Specification for wrought aluminium and aluminium alloy rivet stock for general engineering purposes (*second revision*)
1068 : 1993	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium — Specification (*second revision*)
2102 (Part 1) : 1993	General tolerances: Part 1: Tolerances for linear and angular dimensions without individual tolerance indications (*third revision*)
2155 : 1982	Specification for cold forged solid steel rivets for hot closing (6 to 16 mm diameter) (*first revision*)
4454 (Part 1) : 2001	Steel wires for mechanical springs — Specification: Part 1 Cold drawn unalloyed steel wire (*third revision*)
4905 : 2015	Random sampling and randomization procedures (*first revision*)
7283 : 1992	Hot rolled bars for the production of bright bars and machined parts for engineering applications — Specification (*first revision*)

3 DIMENSIONS

Typical dimensions of padlocks used in bicycle are given in Table 1, Fig. 1, Fig. 2 and Fig. 3 for guidance purpose. Padlocks used in bicycle may be of any other dimensions and shapes as per agreement to between the purchaser and the manufacturer.

3.1 Tolerances

The tolerance, wherever not specified, shall be applicable as per IS 2102 (Part 1) and the class of deviation shall be medium.

4 MATERIAL

The materials used in the manufacturer of various component parts of the padlocks shall comply with the requirements given in **4.1** to **4.8**. Other materials may also for be used as per agreement to between the purchaser and the manufacturer.

4.1 Metal Casing — Cold rolled carbon steel sheet [*see* IS 513 (Part 1)].

4.2 Hardened Locking Bar — Steel bars (*see* IS 7283).

4.3 Levers — Brass (*see* IS 410).

4.4 Fork Clip — Cold rolled carbon steel sheets [*see* IS 513 (Part 1)] or galvanized steel sheets (*see* IS 277).

4.5 Key Steel Bars — (*see* IS 7283), or steel sheet [*see* IS 513 (Part 1)].

4.6 Release Spring — Spring wire [*see* IS 4454 (Part 1)].

4.7 Locking Bar Lever and Fixing Cap — Cold rolled carbon steel sheet [*see* IS 513 (Part 1)].

4.8 Rivet — Mild steel (*see* IS 2155) or aluminium (*see* IS 740).

Table 1 Dimensions of Padlocks, Bicycle

(*Clause* 3)

All dimensions in millimeters

Sl No.	**Thickness of**					**Diameter of**		**Gap**
	Metal casing, Min	Fork Clip, Min	Key, Min	Locking bar lever, Min	Fixing cap, Min	Locking bar, Min	A	B
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	0.70	0.80	2.0	2.0	1.0	7.5	92.5	50

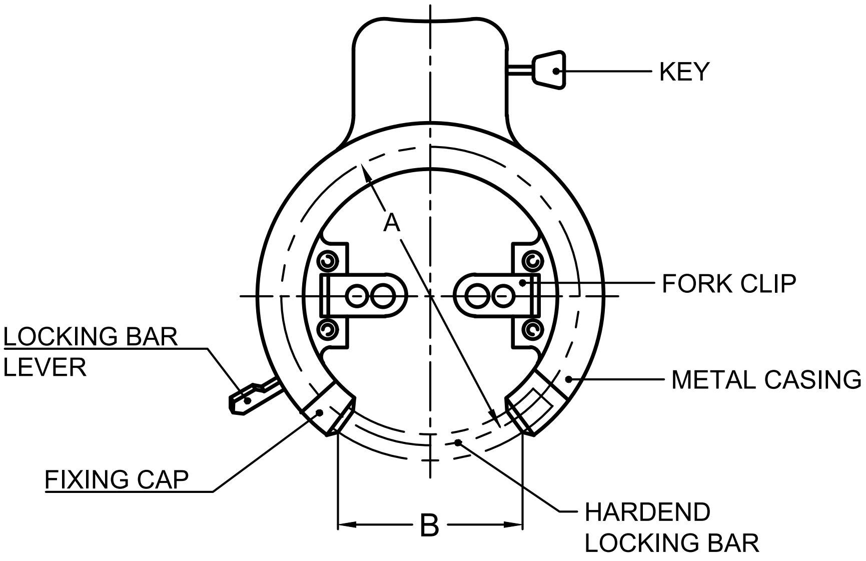

Fig. 1 Padlock Lever

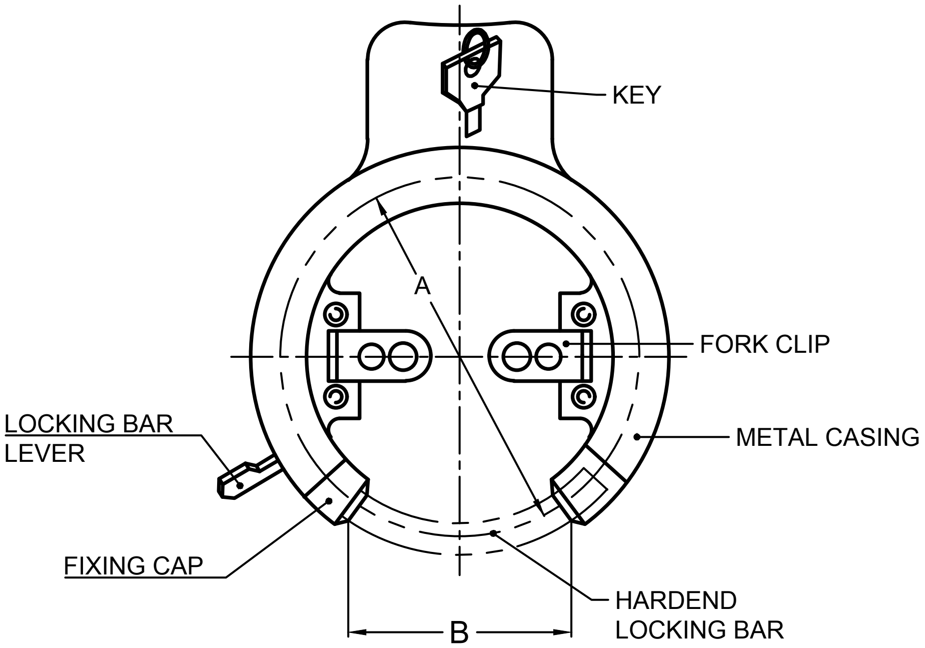

Fig. 2 Padlock

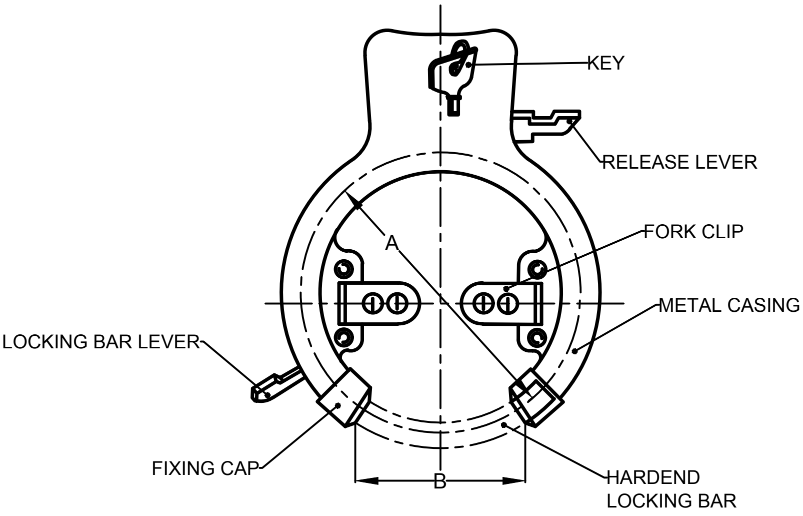

Fig. 3 Padlock with Release Lever

5 REQUIREMENTS

All components of the locks and keys shall be finished smooth to minimize frictional resistance in their working.

5.1 The locks shall have a minimum of 4 levers.

5.2 The locks shall be made so as to have non-interchangeable keys in a batch consisting of a minimum of 250 locks in a single keyway. 10 locks shall be packed to have non-interchangeability in a higher number is required, it shall be so specified by the purchaser at the time of placing the order.

5.3 The hardened locking bar shall be nickel-chromium plated and shall conform to service Grade No. 2 of IS 1068.

5.4 The metal casing shall be painted by enamel paint. The enameled parts shall be free from wrinkles, blisters, uneven drips, scratch marks and other surface defects.

6 TESTS

6.1 A solid steel ball, measuring 13 mm in diameter, shall be dropped from a height of 1.5 metres on any painted portion of the lock. The paint at the place where the steel ball strikes the lock shall withstand the impact without showing any sign of tear or peeling off.

6.2 The locks shall be kept dipped for an hour in a 5 percent common salt solution at the temperature specified below:

a) Black enamel paint – 80 °C, and
b) Other enamel paint – 60 °C.

The paint shall not soften, peel off or show any change in colour.

6.3 The locks shall be subjected to continuous 1 000 locking and unlocking operations and at the end of the test, the locks shall not show any sign of damage and shall function properly.

7 SAMPLING

Unless otherwise agreed to between the purchaser and the supplier, the scale of sampling and criteria for conformity shall be as given in Annex A.

8 MARKING

8.1 Each lock shall be marked with the following information:

a) Manufacturer’s name or trade mark;
b) Year of supply (if specified by the purchaser);
c) Size of lock;
d) No. of levers; and
e) Country of origin.

The keys shall be stamped on the head with the serial number of the lock.

8.2 BIS CERTIFICATION MARKING

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.’

9 PACKING

9.1 Each lock, along with keys, shall be suitably packed as per agreement to between the purchaser and the manufacturer.

9.2 Each packaging shall be marked with the following information:

a) Manufacturer’s name or trademark;
b) Year of supply (if specified by the purchaser);
c) Size of lock;
d) No. of levers; and
e) Country of origin.

9.3 Each carton may contain 10 or in multiples of 10 locks and no key shall be interchangeable in the box of 10 locks.

ANNEX A

(*Clause* **7**)

SAMPLING OF PADLOCKS, BICYCLE

A-1 LOT

In any consignment, all padlocks of same shape and dimensions, manufactured out of the same material, shall be grouped together to constitute a lot. Each lot shall be tested for conformity to the requirements of the specification.

A-2 The number of padlocks to be selected from each lot shall be in accordance with col 2 and 3 of Table 2. These samples shall be selected from the lot at random and in order to ensure the randomness of selection, procedure given in IS 4905 may be followed. Each of the padlocks in the sample shall be examined for shape and dimensions, requirements and tests. Any padlock which fails to meet one or more of the requirements mentioned above shall be termed 'defective'. There shall be no defective in the sample if the lot is to be accepted under this clause.

Table 2 Scale of Sampling and Criteria for Conformity

(*Clause* A-2)

Sl No. (1)	Lot Size (2)	Sample Size (3)
1	Up to 25	3
2	26 to 100	5
3	101 to 150	8
4	151 to 500	13
5	501 and above	20

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

Organization	*Representative(s)*
Office of Development Commissioner, Chennai	Shri G. Shanmuganathan (***Chairman***)
Aligarh Locks Manufacturers and Traders Association, Aligarh	Shri P. L. Shiromani Shri Dhruv Mishra (*Alternate*)
Anna Aluminium Ltd, Cochin	Shri K. Chandrashekran Pillai Shri V. Thulasidharan (*Alternate*)
Butterfly Gandhimati Appliances Ltd, Chennai	Shri K. Shanmugavelu Shri A. Baskar (*Alternate*)
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Delhi Test House, New Delhi	Shri Dinesh Goel Shri Rohit Goel (*Alternate*)
D P Garg and Co Pvt Ltd, Noida	Shri Sandip Garg
Federation of Hardware Mfg. and Traders Welfare Association, Gurugram	Shri Ajay Bhasin Shri Rajesh Bansal (*Alternate*)
Godrej and Boyce Manufacturer’s Company Ltd, Mumbai	Shri K. Shitij R. Gaikar Shri Vinayak G. Nalgirkar (*Alternate*)
Hawkins Cookers Ltd, Thane	Shri B. S. Sethi Shri Rahul Pathak (*Alternate*)
Hindalco Industries Ltd, Distt, Sonbhadra	Shri Ram Awadhesh Singh Shri Arun Kumar (*Alternate*)
Jindal Stainless Limited, Hisar	Shri Biswabasu Roy Chowdhury Shrimati Jalaja Menon (*Alternate*)
J K Metal Industries, Jagadhri	Shri Satish Garg Shri Bharat Garg (*Alternate*)
Ministry of Defence (DGQA), Kanpur	Er M. Satyanarayana Shri S. J. Kolarkar (*Alternate*)
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Pritam Internation, Baddi	Shri Rahul Khera Shri Rohit Khera (*Alternate*)
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Republic Engineers, New Delhi	Shri M. P. Singh
Royal Kitchen Appliances Pvt Ltd, Sonepat	Shri Suresh Agarwal

Organization	*Representative(s)*
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Sriram Institute for Industrial Research, New Delhi	Dr Tarsame Singh Sian Shri Shambhu Thakur (*Alternate*)
Steel Authority of India, Salem	Shri M. Velmurugan Shri N. K. Vijayavargia (*Alternate*)
TTK Prestige Ltd, Bengaluru	Shri Anto Vimal Anand Shri Rajasekaran S. (*Alternate*)
In personal capacity (*179, Sri Sai, 13th Cross, Ananthnagar Phase 1, Electronic City Post*), *Bengaluru*	Shri B. Viswanath Shenoy
BIS Directorate General	Shri Rajneesh Khosla, Scientist 'E' and Head (MED) [Representing Director General (*Ex-officio*)]

Member Secretary
Shri Chandan Gupta
Scientist 'D' (MED), BIS

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